

Claims.

1. Method for the decision whether to reuse or reject a refractory plate of a slide gate valve used for the control of the flow of a molten metal during the casting of said metal from an upper vessel towards a lower vessel, **characterized in that** a set of parameters, at least one of them being conventionally measured during the casting and at least one of them being proper to the plate, are determined, calculated or measured during successive uses of the plate and are then compared to threshold values.
2. Method according to claim 1; **characterized in that** the threshold values are set in relation to the local conditions of use.
3. Method according to claim 1 or 2, **characterized in that** it is based on the instant determination of the plate wear.
4. Method according to claim 3, **characterized in that** the instant wear of the throttling lips of the plates is determined by the calculation of the difference between the measured throttling rate of the valve and the calculated throttling rate.
5. Method according to claim 3, **characterized in that** the instant wear of the throttling lips is determined by the calculation of the difference between the actual flow rate calculated for an instant position of the valve measured by an appropriate device for an instant ferrostatic pressure calculated in function of the instant metal weight and the inner geometry of the upper vessel at a given time, for a given diameter of the pouring orifice and the same flow rate as calculated according to the laws of physic.
6. Method according to claim 3, **characterized in that** the radial plates wear is determined by calculating the difference between the actual flow rate measured when the gate is fully opened, for an instant ferrostatic pressure calculated in function of the instant metal weight and of the inner geometry of the upper vessel at this time and the flow rate calculated according to the laws of physic in the same conditions.
7. Method according to claim 3, **characterized in that** the alteration of the characteristics of relative displacement of the plates is determined on the basis of the energy used for the relative displacement of the plates.
8. Method according to any one of the claims 1 to 7, **characterized in that** the plate use history is taken into account in the decision.
9. Method according to claim 8, **characterized in that** the various events and incidents occurred during the casting are taken into account in the decision.
10. Method according to claim 1 or 2, **characterized in that** it is based on the instant determination of the plate wear taking into account the plates use history.

11. Device for carrying out the method according to any one of the claims 1 to 10,
characterized in that it comprises an input unit connected to sensors, detectors or
counters for introducing the selected variables, a unit for the memorization of the
threshold values and a calculation unit able to perform operations on the variables
introduced through the input unit and to compare the parameters or the results of said
operations on these parameters to the threshold values and an output unit able to emit a
signal corresponding to the decision whether to reuse or reject.